a state judging portion for judging whether the O_2-sensor is in an active state or in an inactive state on the basis of a voltage of the output signal of the O_2-sensor; and

A1 Cont'd

a fault diagnosis portion for diagnosing whether the O_2-sensor has any fault on the basis of the voltage of the output signal of the O_2-sensor under a condition where it is judged that the O_2-sensor is in the inactive state, wherein fuel is not injected when the O_2-sensor is in the inactive state.

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5. (Amended) An O_2-sensor fault diagnosis method comprising the steps of:

judging whether an O_2-sensor is in an active state or in an inactive state on the basis of a voltage of an output signal of the O_2-sensor; and

diagnosing whether the O_2-sensor has any fault on the basis of the voltage of the output signal of the O_2-sensor under a condition where it is judged that the O_2-sensor is in the inactive state, wherein fuel is not injected when the O_2-sensor is in the inactive state.

A2

6. (Amended) The O_2-sensor fault diagnosis method according to Claim 5, further comprising a step of changing a level of the output signal of the O_2-sensor by changing an input resistance,

wherein in said diagnosing step, a fault of the O_2-sensor is identified on the basis of a change in a level of the output signal of the O_2-sensor.

7. (Amended) The O_2-sensor fault diagnosis method according to Claim 5, wherein in said diagnosing step, it is diagnosed whether the O_2-sensor has any fault each time it is judged in the judging step that the O_2-sensor is in the inactive state.

A2 Cont'd

8. (Amended) The O_2-sensor fault diagnosis method according to Claim 5 further comprising an informing step for sending a notice if the O_2-sensor is diagnosed to have a fault in said diagnosing step.

Please add the following new claims:

9. (New) The method according to claim 5, wherein the O_2-sensor is operable to detect a concentration of oxygen contained in an exhaust gas of an internal combustion engine.

A3

10. (New) The apparatus according to claim 2, wherein said fault diagnosis portion calculates a timing at which the input resistance is changed, and changes the input resistance for a predetermined period of time.